

NOV 26 2008

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FAX TRANSMISSION

Date: November 26, 2008
To: Examiner G. Koch GAU 1791 U.S. Patent and Trademark Office
Fax: 571-273-8300
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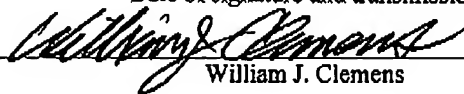
COMMENTS: Please see the following Fee Transmittal form and Appeal Brief for filing in the patent application S/N 10/691,763. Thank you.

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Effective on 12/08/2004.
Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).**FEE TRANSMITTAL**
For FY 2009☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$) 540.00

Complete if Known

Application Number	10/691,763
Filing Date	October 23, 2003
First Named Inventor	Clifford
Examiner Name	G. Koch
Art Unit	1791
Attorney Docket No.	16129

METHOD OF PAYMENT (check all that apply)☐ Check ☐ Credit Card ☐ Money Order ☐ None ☐ Other (please identify): _____☒ Deposit Account Deposit Account Number: 50-3156 Deposit Account Name: _____

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FEE CALCULATION**1. BASIC FILING, SEARCH, AND EXAMINATION FEES**

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	
Utility	330	165	540	270	220	110	
Design	220	110	100	50	140	70	
Plant	220	110	330	165	170	85	
Reissue	330	165	540	270	650	325	
Provisional	220	110	0	0	0	0	

2. EXCESS CLAIM FEES

Fee Description	Fee (\$)	Small Entity Fee (\$)
Each claim over 20 (including Reissues)	52	26
Each independent claim over 3 (including Reissues)	220	110
Multiple dependent claims	390	195

Total Claims	Extra Claims	Fee (\$)	Fee Paid (\$)
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- 20 or HP =	x	=	
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HP = highest number of total claims paid for, if greater than 20.

Indep. Claims	Extra Claims	Fee (\$)	Fee Paid (\$)
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- 3 or HP =	x	=	
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HP = highest number of independent claims paid for, if greater than 3.

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$270 (\$135 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof	Fee (\$)	Fee Paid (\$)
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- 100 =	/ 50 =	(round up to a whole number) x	=	
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4. OTHER FEE(S)


Non-English Specification, \$130 fee (no small entity discount)

Other (e.g., late filing surcharge): Appeal Brief

Fees Paid (\$)

540

SUBMITTED BY

Signature		Registration No. (Attorney/Agent) 26,855	Telephone 248-960-2100
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This collection of information is required by 37 CFR 1.136. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of: CLIFFORD et al.)	Confirmation No.: 6713
)	
Serial No.: 10/691,763)	Examiner: G. KOCH
)	
Filed: October 23, 2003)	Group Art Unit: 1791
)	
For: <u>MODULAR PAINTING APPARATUS</u>)	<u>Attorney Docket: 16129</u>

BRIEF ON APPEAL**(i) *Real Party in Interest:***

The real party in interest is FANUC ROBOTICS AMERICA, INC., the assignee of record.

(ii) *Related Appeals and Interferences:*

Applicants are not aware of any related appeals or interferences.

(iii) *Status of Claims:*

Claims 1-60 are cancelled.

Claims 61-101 are rejected.

Claims 102-151 are withdrawn from consideration.

The claims on appeal are 61-101. A copy of the claims on file is submitted in the attached Claims Appendix.

(iv) *Status of amendments:*

There are no amendments pending in the application.

(v) *Summary of claimed subject matter:*

The invention sought to be patented relates to a modular apparatus for processing (such as by painting) an article (such as surfaces of a vehicle body) moved along a path. The modular apparatus includes two guide/frame rails and at least one robot located on

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and movable along the length of each of the two guide rails. The guide rails are elevated above the article on opposite sides of the path. The guide rails are part of a rigid frame structure that prevents movement of one of guide rails relative to another of the guide rails.

The novel modular apparatus for painting surface of a vehicle body moved along a path as set forth in independent Claim 61 comprises:

- a) a modular apparatus (Specification at page 4, lines 19-22, and page 5, lines 25-26; Figs. 1 and 6, reference numerals 10 and 20) including two guide rails;
and
- b) at least one robot (Specification at page 5, lines 2-4, and page 6, lines 6-7; Figs. 1, 2 and 6, reference numeral 16) located on and movable along the length of each of the two guide rails;
- c) the guide rails comprising a pair of frame rails (Specification at page 4, lines 21-24, and page 6, lines 1-5; Figs. 1, 3, 4 and 6, reference numeral 11) located on opposite sides of and extending generally parallel to the path of movement of the vehicle body, the frame rails being located above a plane of an upper surface of the vehicle body (Specification at page 9, lines 7-11; Fig. 6, reference numerals body 43 and upper surface 44) as the vehicle body travels the path, the frame rails being fixedly mounted on a rigid frame structure that prevents movement of one of the frame rails relative to another of the frame rails (Specification at page 4, lines 26-32, and page 6, lines 1-5);
- d) the at least one robot comprising a first and a second robot arm (Specification at page 8, lines 8-11; Fig. 5, reference numerals first arm 32 and second arm 35) mounted on an associated one of each of the frame rails, each of the first and second robot arms being slidably movable along the associated frame rail and having a shoulder axis (Specification at page 8, lines 8-9, Fig. 6, reference numeral 34) and an elbow axis (Specification at page 8, lines 9-11, Fig. 6, reference numeral 36) for movement only in a generally vertical plane transverse to the path of movement of the vehicle body (Specification at page 8, lines 15-16, and page 9, lines 29-30), the

shoulder axes being positioned below the associated frame rail (Preliminary Amendment filed May 26, 2006 at page 3; Fig. 6, reference numerals frame rail 11 and shoulder axis 34); and

- e) a paint applicator (Specification at page 5, lines 3-4; Figs. 1, 2, 5 and 6, reference numeral 17) mounted on each of the first and second robot arms for dispensing paint whereby each of the first and second robot arms is sized to move the paint applicator relative to the vehicle body while the paint applicators dispense paint to cover the upper surface and adjacent side surfaces of the vehicle body with the paint (Specification at page 9, lines 11-14).

Dependent Claim 69 recites a control means (Specification at page 9, lines 14-18; Figs. 5 and 6, reference numeral 46 designating the process controller).

The novel modular apparatus for painting a vehicle body having an upper surface and opposed side surfaces and being conveyed along a path as set forth in independent Claim 72 comprises:

- a) the modular apparatus including robots, frame rails and paint applicators as referenced in Claim 61;
- b) at least two legs (Specification at page 4, lines 24-26, and page 9, lines 8-11; Figs. 1, 3, 4 and 6, reference numeral 13) attached to each said frame rail for supporting said frame rails above a plane of the upper surface of the vehicle body on the path (Specification at page 5, lines 13-17); and
- c) at least one cross member (Specification at page 4, lines 26-28; Figs. 1, 3, 4 and 6, reference numeral 14) fixedly connecting said frame rails together as a rigid frame structure that prevents movement of said frame rails, fixes said frame rails relative to one another and to said plane, and minimizes a width of said rigid frame structure relative to a width of the vehicle body (Specification at page 7, lines 16-19).

The novel modular apparatus for painting surfaces of a vehicle body moved along a path through a paint booth as set forth in independent Claim 81 comprises:

- a) the modular apparatus including robots, frame rails and paint applicators as referenced in Claim 61;

- b) at least one robot arm including a controller mounted on said rail for travelling along said rail (Specification at page 9, lines 14-18; Figs. 5 and 6, reference numeral controller 46); and
- c) wherein said control means is connected to each of said first and second robot arms for selectively dispensing the paint in a normal mode wherein different areas of the upper surface and the adjacent side surface are covered by said paint applicators of each of said first and second robot arms and a degraded mode wherein the upper surface and the adjacent side surface are covered by said paint applicator of one of said first and second robot arms (Specification at page 9, lines 11-14, and page 10, lines 3-5).

The novel modular apparatus for painting surfaces of a vehicle body moved along a path as set forth in independent Claim 90 comprises:

- a) the modular apparatus including robots, frame rails and paint applicators as referenced in Claim 61; and
- b) a first and a second robot arm mounted on an associated one of each of said frame rails, each of said first and second robot arms having a carriage (Specification at page 5, lines 1-3; Figs. 1, 2 and 6, reference numeral mounting base 15) movable along an associated one of said frame rails, first and second arm links (Specification at page 8, lines 8-11; Figs. 5 and 6, reference numerals first link 32 and second link 35), and mounting means (Specification at page 8, lines 11-12; Figs. 5 and 6, reference numeral wrist 37) for mounting a paint applicator at an end of said second arm link, three parallel axes of movement including a first linear axis (Specification at page 8, lines 16-19; Fig. 5, reference numeral rail axis 40) wherein said carriages move along said associated frame rails, a second rotational axis (Specification at page 8, lines 8-9; Figs. 5 and 6, reference numeral shoulder axis 34) located below said first linear axis for rotating said first arm link relative to said carriage and a third rotational axis (Specification at page 8, lines 9-11; Figs. 5 and 6, reference numeral elbow axis 36) spatially separated from said second rotational axis by said first arm link for rotating said second arm link relative to said first arm

link whereby movement of a paint applicator attached to said mounting means is restricted to a generally vertical plane transverse to the path of movement of the vehicle body and movement along the path of movement of the vehicle body (Specification at page 8, lines 15-16).

The novel modular apparatus for processing an article moved along a path as set forth in independent Claim 91 comprises:

- a) the modular apparatus including robots and frame rails as referenced in Claim 61;
- b) the robot including a control system (Specification at page 9, lines 14-18, and page 10, lines 1-2; Figs. 5 and 6, reference numeral controller 46);
- c) the robot having six axes of motion and being connected to said control system for controlling movement of said robot, said modular system having a frame structure including first and second linear and parallel guide rails (Specification at page 4, lines 21-23; Figs. 1 and 6, reference numeral frame rail 11), a first carriage supported on said first guide rail and movable along a first of said six axes and a second carriage supported on said second guide rail and movable along a second of said six axes (Specification at page 5, line 1; Figs 1 and 6, reference numeral base 15), a first arm link rotationally coupled at one end to said first carriage at a third of said six axes and rotationally coupled at another end to a second arm link at a fourth of said six axes (Specification at page 8, lines 8-11; Figs. 5 and 6, reference numerals first link 32, third axis 34, second link 35 and fourth 36), a third arm link rotationally coupled at one end to said second carriage at a fifth of said six axes and rotationally coupled at another end to a fourth arm link at a sixth of said six axes (Specification at page 8, lines 8-11; Figs. 5 and 6, reference numerals third link 32, fifth axis 34, fourth link 35 and sixth axis 36), and process tool mounting means (Specification at page 8, line 11-12; Figs. 5 and 6, reference numeral wrist 37) supported at terminal ends of said second and fourth arm links, wherein said first and second guide rails are elevated above the article on opposite sides of the path and said six axes are parallel to the path

(Specification at page 5, lines 13-17, and page 9, lines 8-11; Figs. 5 and 6).

The novel robot for processing an article moved along a path as set forth in independent Claim 98 comprises:

- a) the robots, guide rails, control system and carriages as referenced in Claim 91;
- b) a first link mechanism rotationally coupled to said first carriage at a third axis (Specification at page 8, lines 6-11; Figs. 5 and 6; reference numerals first carriage **15**, first link **32** and **35**, and third axis **34**);
- a second link mechanism rotationally coupled to said second carriage at a fourth axis (Specification at page 8, lines 6-11; Figs. 5 and 6; reference numerals second carriage **15**, second link **32** and **35**, and fourth axis **34**); and
- a process tool mounting means (Specification at page 8, lines 11-14; Figs. 5 and 6, reference numeral **37** identifying a wrist) supported at terminal ends of said first and second link mechanisms, wherein said guide rails are fixed and said modular system is elevated above the article on opposite sides of the path (Specification at page 5, lines 13-17, and page 9, lines 8-11; Figs. 5 and 6).

(vi) *Grounds of Rejection to be Reviewed on Appeal:*

1. The rejection of Claims 61, 63, 65, 67, 69-73, 77, 79-82, 86, 87, 89-92, 94-95 and 98-101 under 35 U.S.C. 103(a) as being unpatentable over Takeo (US Patent 4,721,630) in view of Yamamoto (US Patent 5,240,745) and either or both of Nuber (DE 101 19 906 A1) and/or Pearce (US 4,781,517)
2. The rejection of Claims 74, 83 and 97 under 35 U.S.C. 103(a) as being unpatentable over Takeo, Yamamoto, Nuber and/or Pearce as applied to Claims 72, 81 and 91 above, and further in view of Thome (US Patent 5,744,190).
3. The rejection of Claims 75, 88 and 96 under 35 U.S.C. 103(a) as being unpatentable over Takeo, Yamamoto, Pearce and Thome as applied to Claims 72, 81 and 91 above, and further in view of Cebola (US Patent 5,738,727).

4. The rejection of Claim 76 under 35 U.S.C. 103(a) as being unpatentable over Takeo, Yamamoto, Pearce and Thorne as applied to Claims 75 and 52 [sic] above, and further in view of Neikter (US Patent 5,296,026).

5. The rejection of Claims 64 and 85 under 35 U.S.C. 103(a) as being unpatentable over Takeo, Yamamoto and Pearce as applied to Claims 61 and 81 above, and further in view of Josefsson (US Patent 5,766,355).

6. The rejection of Claims 66 and 68 under 35 U.S.C. 103(a) as being unpatentable over Takeo, Yamamoto and Pearce as applied to Claims 61 and 67 above, and further in view of Cebola (US Patent 5,738,727).

7. The rejection of Claims 62, 84 and 93 under 35 U.S.C. 103(a) as being unpatentable over Takeo, Yamamoto and Pearce as applied to Claims 61 and 81 above, and further in view of Hohn et al (US Patent 4,896,274).

(vii) *Argument:*

The rejection of Claims 61-101 under 35 U.S.C. 103(a) based upon Nuber:

In the Final Office Action (FOA), dated June 30, 2008, the Examiner relies on Nuber (Nüßer DE 101 19 906 A1) to support the rejection under 35 U.S.C. 103(a) of all of Applicant's independent Claims 61, 72, 81, 90, 91 and 98. Nuber has a publication date of October 24, 2002. Applicant claims priority to Provisional Application Serial No. 60/420,612 filed on October 23, 2002. Therefore, Nuber is not prior art.

The Examiner rejected Claims 61, 63, 65, 67, 69-73, 77, 79-82, 86, 87, 89-92, 94-95 and 98-101 under 35 U.S.C. 103(a) as being unpatentable over Takeo (US Patent 4,721,630) in view of Yamamoto (US Patent 5,240,745) and either or both of Nuber and/or Pearce (US 4,781,517). (FOA at page 3) While Nuber and Pearce were cited as being interchangeable, the Examiner relies solely on Nuber (FOA at page 5) for disclosing a paint spraying six-axis robot including a fixed frame rail, fixed cross beams and the robot having a shoulder, elbow and wrist below the auxiliary axis and racks permitting movement only in a generally vertical plane (Fig. 3). Additionally, the Examiner relies solely on Nuber to obviate raising the frame and lowering the robot below this frame to improve access to the top surface of the substrate, and in the automobile field, improve coating of the roof of the car (FOA at page 5).

Applicant's Provisional Application Serial No. 60/420,612 shows a paint spraying six-axis robot system (two robots) including fixed frame rails, fixed cross beams and the robots having a shoulder, elbow and wrist below the frame rail and permitting movement only in a generally vertical plane. (Provisional Specification at page 1, line 29, through page 2, line 23, and photographs on page 50; Figs. 1 and 2) Therefore, as set forth above, Nuber is not prior art.

The rejection of Claims 61, 63, 65, 67, 69-73, 77, 79-82, 86, 87, 89-92, 94-95, and 98-101 under 35 U.S.C. 103(a):

The Examiner rejected these claims as being unpatentable over Takeo (US Patent 4,721,630) in view of Yamamoto (US Patent 5,240,745) and either or both of Nuber (DE 101 19 906 A1) and/or Pearce (US 4,781,517). (FOA at page 3)

Claims 61, 63, 65, 67 and 69-71:

Applicant's independent Claim 61 recites "each of said first and second robot arms being slidably movable along said associated frame rail and having a shoulder axis and an elbow axis for movement only in a generally vertical plane transverse to the path of movement of the vehicle body, said shoulder axes being positioned below said associated frame rail". The Examiner stated that "Similarly, Nuber discloses that the shoulder and elbow permit movement only in a generally vertical plane from the position of the joints in Figure 3." (FOA at page 6) However, Nuber is not prior art, and Takeo, Yamamoto and Pearce do not show shoulder axes positioned below the associated frame as recited in Applicant's independent Claim 61 and dependent Claims 62-71.

Takeo shows an apparatus for painting the inner panel portions of vehicle body front and rear lids and doors using front and rear painting robots. The Takeo apparatus moves a vehicle body W to a painting stage A positioned between first and second railway means 11 mounted on a floor at the painting stage A. The rails 11 are positioned well below the bottom of the vehicle body W, as seen in Fig. 2, as are tables 12₁, 12₂ movable along the rails and carrying robots 5₁, 5₂ respectively. Takeo does not show frame rails located above a plane of an upper surface of the vehicle body, or the frame rails fixedly mounted on a rigid frame structure, or robot arms having shoulder axes positioned below the associated frame rails as recited in Applicant's Claim 61.